

Case 3598***Thyone* Oken, 1815 and *Psolus* Oken, 1815 (Echinodermata, Holothuroidea): proposed reinstatement as available names**

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Abstract. The purpose of this application, under Articles 80.7.2 and 81.1 of the Code, is to reinstate as available the generic names *Thyone* Oken, 1815 and *Psolus* Oken, 1815, which were introduced by Oken (1815) in a work that was rejected by the Commission in Opinion 417 because it was not consistently binominal. The names acquired availability from subsequent use by Lesson (1830) with concepts that differ completely from Oken's, and from the currently accepted usage of these names. *Thyone* and *Psolus* are among the most frequently used generic names in the Holothuroidea. It is requested that the Commission reinstate the availability of the names *Thyone* Oken, 1815 and *Psolus* Oken, 1815 published in the rejected work for the sake of nomenclatural stability.

Keywords. Nomenclature; taxonomy; Echinodermata; Holothuroidea; *Thyone*; *Psolus*; *Thyone fusus*; *Psolus phantapus*; sea cucumbers; cosmopolitan.

1. Oken (1815) was the first to divide the class Holothuroidea into multiple genera: *Thyone* (p. 351), *Holothuria* (p. 351), *Subuculus* (p. 351), *Psolus* (p. 352). *Thyone* and *Subuculus* were monotypic genera, type species *Thyone fusus* (= *Holothuria fusus* Müller, 1776, p. 232; PHYLLOPHORIDAE Östergren, 1907) and *Subuculus penicillus* (= *Holothuria penicillus* Müller, 1776, p. 232, subjective synonym of *Holothuria fusus* Müller, 1776) respectively, while three species were listed for *Psolus*: *P. phantapus* (= *Holothuria phantapus* Strussenfelt, 1765, p. 263), *P. pentactes* (= *Holothuria pentactes* Linnaeus, 1767, p.1091), and *Psolus squammosus* (incorrect subsequent spelling for *Holothuria squamata* Müller, 1776, valid, accepted as *Psolus squamatus*). Clark (1946) designated *Holothuria phantapus* as the type species of *Psolus*, in turn the type genus of the PSOLIDAE Forbes, 1841.

2. Oken's (1815) work was suppressed by the Commission in Opinion 417 (BZN 14: 1–42; September 1956) because it 'did not apply the principles of binominal nomenclature'. The ruling also stated: 'Specialists in the groups dealt with in the foregoing work are invited to submit to the International Commission on Zoological Nomenclature applications for the validation under the Plenary Powers of any name published in it, the rejection of which would, in their opinion, lead to instability or confusion in the nomenclature of the group concerned'.

3. While *Subuculus* Oken has been largely forgotten and does not appear past the mid-1800s in the echinoderm taxonomic literature, 59 valid species are currently attributed to *Psolus*, and 59 valid species are currently attributed to *Thyone* (WoRMS, 2012). *Psolus* is cosmopolitan, currently recognized from the Arctic to the Antarctic, through the tropics and includes such well-known European and American taxa as *P. phantapus* (Strussenfelt, 1765), *P. fabricii* (Düben & Koren, 1846), *P. squamatus* (Müller, 1776), and *P. chitinoides* (Clark, 1901). *Thyone* is also broadly distributed across all oceans, in temperate to tropical latitudes, and includes the well-known European *Thyone fusus* (Müller, 1776).

4. Pawson & Miller (1981, p. 394) pointed out the impact of Opinion 417 on *Thyone*, and transferred authorship to Jaeger (1833), the publication that they considered to have been the first available use of the genus after Oken (1815). Jaeger (1833, pp. 8–9) reviewed Oken's work and introduced *Thyone* in that context, listing *T. fusus*, and also introduced *Psolus*, listing '*Psolus pantapus*' [sic; = *phantapus*] and *T. squamosus* [sic; *squammosus* of Oken, 1815 and *squamata* of Müller, 1776].

5. If Jaeger's (1833) was the first valid use of these generic names after Oken (1815), then they could be attributed to him without changing their meaning as understood today; however Lesson (1830) also listed these genera, and if Oken's authorship is rejected, they would take their availability from Lesson's usage. Lesson (1830) attributed two species to *Thyone*: '*Holothuria (Thyone, Oken) eaouari*, Less.' (p. 91, an echiuran worm likely of the genus *Ochetostoma*), and '*Holothuria (Thyone Oken) edulis*, Less.' (p. 125, currently *Holothuria (Halodeima) edulis* Lesson, 1830). He attributed one species to *Psolus*, '*Holothuria (Psolus, Oken) monacaria*, Less.' (p. 225, currently a junior synonym of *Holothuria (Mertensiothuria) hilla* Lesson, 1830). Based on Lesson's (1830) use, both *Thyone* and *Psolus* would need to be considered as junior synonyms of the aspidochirotid genus *Holothuria* Linnaeus, 1767, (or, alternatively for *Thyone*, of the echiuran *Ochetostoma* Leuckart & Ruppell, 1828, depending on subsequent type designation), instead of valid, dendrochirotid genera.

6. We propose that in the interest of stability and to preserve the current usage and meaning of the generic names *Thyone* and *Psolus*, Oken's names be deemed available under the plenary power. However, we have refrained from making a type designation for *Thyone* Lesson, 1830, as that name would only need to be considered if *Thyone* Oken, 1815 was not reinstated. Another option would be to ask the Commission to suppress *Thyone* Lesson, 1830 and *Psolus* Lesson, 1830 for the purposes of both the Principle of Priority and the Principle of Homonymy and put these two names on the Official Index, while also putting *Thyone* Jaeger, 1833, *Psolus* Jaeger, 1833, and their type species on the Official Lists. However, we prefer the course presented, as it was recommended by the Commission's original ruling in Opinion 417. Similar requests to reinstate Oken's (1815) names based on practical necessity brought about by long usage have been previously approved by the Commission (e.g. Opinion 674 BZN 20: 329–330, October 1963; Opinion 902 BZN 26: 221–222, April 1970; etc.).

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the names *Thyone* Oken, 1815 and *Psolus* Oken, 1815 are available from the original publication by Oken (1815);
- (2) to place on the Official List of Generic Names in Zoology the following names:

- (a) *Thyone* Oken, 1815 (gender: feminine), type species by monotypy *Holothuria fusus* Müller, 1776;
- (b) *Psolus* Oken, 1815 (gender: masculine), type species by subsequent designation by Clark (1946) *Holothuria phantapus* Strussenfelt, 1765;
- (3) place on the Official List of Specific Names in Zoology the following names:
 - (a) *fuscus* Müller, 1776, as published in the binomen *Holothuria fusus*, the specific name of the type species of *Thyone* Oken, 1815;
 - (b) *phantapus* Strussenfelt, 1765, as published in the binomen *Holothuria phantapus*, the specific name of the type species of *Psolus* Oken, 1815.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).